

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-28 are presently active; Claims 1, 8, 9, and 16 having been amended by way of the present amendment.

In the outstanding Office Action, Claims 1-5, 7-20, 22-23, 25, and 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Fotland (U.S. Pat. Publ. No. 2001/0048529) in view of Yoo (U.S. Pat. No. 6,241,146). Claims 6 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Fotland and Yoo in view of Whiting et al (U.S. Pat. No. 6,618,170). Claims 24, 26, and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Fotland and Yoo in view of Kohler et al (U.S. Pat. No. 6,873,431).

Claim 1 as amended defines that an image reading apparatus including:

a storage unit which stores reference image data *including color tones of the reference image data*, generated based on image data for reference color patches taken from a reference scan of the reference color patches to provide stored image data of the reference color patches at a time of software initialization of the image reading apparatus;

a display unit which reproduces two images, a first image based on processed image data taken from a comparison scan of the same reference color patches after a predetermined plurality of images have been scanned and a second image based on the reference image data stored in the storage unit containing the stored image data taken from the reference scan of the reference color patches, and which displays the two images so as to be contrasted with each other *by said color tones*, wherein the reference scan and the comparison scan are scans of the same reference color patches. [Emphasis added.]

Accordingly, in Claim 1, a comparison is made by color tone contrast between 1) a reference scanned image of reference *color patches* and 2) a comparison scanned image of the *same reference color patches*. As such, the image reading apparatus of Claim 1 provides a reliable

way to track the quality of the image reading apparatus over time by a comparison to a fixed set of reference color patches.

The Office Action acknowledges on page 3 that Fotland fails to disclose “taken from a reference scan of the reference color patches; taken from a comparison scan of the same reference color patches after a predetermined plurality of images have been scanned; taken from the reference scan; wherein the reference scan and the comparison scan are scans of the same reference color patches.” Thereafter, the Office Action applied Yoo for an asserted teaching of these features at col. 6, lines 38-59. Those sections of Yoo are reproduced below for the record.

Referring to FIG. 3, the timing determination corrector 220 as shown in FIG. 3, includes a correction memory 221 for storing the standard data; a maintenance data generator 222 for storing the correction determination data as shading data achieved from the second shading reference pattern during the correction determination mode as the operation mode from the analog/digital convertor 100; a data comparator 223 for comparing whether the deviation data between the correction determination data at the present time and the standard data is above the allowed range; and a correction notice informer 224 for informing a correction time for the shading factor renewer 230 in case of the occurrence of the deviation above the preset allowed range to the shading factor renewer 230 using audio, visual or audio-visual alarm means.

Preferably, the first shading reference pattern is a white paper, and the second shading reference pattern is a white roller. In addition, the standard data is preferably shading data for correction determination prepared by scanning the second shading reference pattern at the preset storage time, and the preset storage time is preferably the time of manufacturing of the image scanning system.

Hence, the two reference patterns in Yoo are 1) a white paper, and 2) a white roller.

In order to better understand Yoo’s shading reference pattern, the examiner’s attention is directed to col. 4, lines 12-29:

To achieve these and other advantages and in accordance with the purpose and the advantages of the present invention, a method for shading correction of an image scanning system to read image data of a document by photoelectric conversion is provided by the present invention. The method includes preparing the shading factor matrix by scanning a standard shading

reference pattern, *such as white paper at the time of product production*, which is stored in a non-volatile memory *without the periodically-carried out pseudo scanning*, and using the shading factor matrix, shading correction is performed in a real scanning. Also, a shading correction apparatus of the present invention includes a means for detecting/informing of the contamination/damages of the optical parts of the system so as to automatically *detect any negative changes of the characteristics of the optical parts*, and the shading factor matrix is renewed in a case of cleaning the fouled optical parts or fixing them with notice of the maintenance time. [Emphasis added.]

Hence, the shading reference pattern in Yoo is actually a piece of white paper (or white roller), which contains no coloration. Indeed, if the white paper in Yoo contained colorations, these colorations would be mistaken by the shading correction apparatus in Yoo as contamination/damages of the optical parts, as non-white reflections would show less reflected intensity.

Indeed, the Advisory Action seems to indicate agreement on this point as the examiner now cites Yoo's color shading patterns at col. 7, lines 26-34, which states in the context reproduced below:

Especially, in a color image scanning system, the light reflected from the first shading reference pattern during a pseudo scanning is color-separated via a spectrometer filter for each color element, and *shading data* can be achieved *for each color element* by the photoelectric conversion in the image sensor 20 corresponding to each color element.

As described above, *shading data for the colors of red, green, and blue* is determined by scanning the white-color series correction pattern such as a white panel, a white paper, a white roller, etc., and color-separating the scanning results via an optical filter. However, alternatively, the shading data *for respective colors other than the white* can be achieved by scanning the additional-prepared shading reference patterns of red, green, and blue respectively, their saturation degree being 100%. [Emphasis added.]

Thus, Yoo describes a color shading determination made for a variety of colors. Yoo does not disclose or suggest a first image based on processed image data taken from a

comparison scan of the same reference color patches contrasted by way of color tones after a predetermined plurality of images have been scanned.

Accordingly, Yoo can be considered to teach away from the claimed comparison scan of the same reference color patches contrasted by way of color tones after a predetermined plurality of images have been scanned. The Court in In re Gurley, 31 USPQ2d 1130 (Fed. Cir. 1994) stated that:

A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, *or would be led in a direction divergent from the path that was taken by the applicant*. The degree of teaching away will of course depend on the particular facts; in general, a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant. [Emphasis added.]

Hence, independent Claims 1, 8, 9, and 16 (and the claims dependent therefrom) are believed to patentably define over the art of record.

Consequently, in view of the amendments and in light of the above discussions, the outstanding grounds for rejection are believed to have been overcome. The application is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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